Message

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Sent: 4/16/2015 4:48:42 PM
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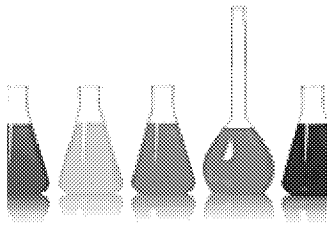
Subject: News Update: EPA's Benzo[a]pyrene Analysis Could Impact Air Toxics Rules, Hazardous Waste Cleanups (BloombergBNA)

Risk Assessment

EPA's Benzo[a]pyrene Analysis Could Impact Air Toxics Rules, Hazardous Waste Cleanups



BNA Snapshot

Assessing Risks of Chemicals Produced by Combustion

Key Development: Risk values and other information from an EPA toxicological review of benzo[a]pyrene will be used in at least a dozen regulatory and non-regulatory decisions the agency's air office will make and also will affect hazardous waste cleanups, speakers tell an agency advisory board.

Potential Impact: The draft dermal slope factor included in the EPA's assessment—the first that the agency's Integrated Risk Information System has ever calculated—exaggerates the cancer risk of benzo[a]pyrene and would lead to more expensive hazardous waste cleanups, toxicologists and other industry scientists say.

By Pat Rizzuto

April 15 — The Environmental Protection Agency's air office will use risk values, health effects conclusions and other information in a toxicological review of benzo[a]pyrene to make at least a dozen decisions, an agency toxicologist said April 15.

Ines Pagan, a toxicologist working on air toxics in the EPA's Office of Air Quality Planning and Standards, briefly summarized reasons the air office is interested in the benzo[a]pyrene assessment that is being completed by the agency's Integrated Risk Information System (IRIS) program.

"Benzo[a]pyrene is emitted by many of the source categories we regulate," Pagan said as she telephoned in to a Science Advisory Board meeting. The board's Chemical Assessment Advisory Committee is peer-reviewing the IRIS program's draft 2014 assessment of benzo[a]pyrene (BaP) (193 DEN A-6, 10/6/14).

The chemical, which is the most studied compound within the family of polycyclic aromatic hydrocarbons (PAHs), will be addressed through about a dozen regulatory and non-regulatory risk management actions the air office expects to release in a year or so, Pagan said.

Sources Include Combustion, Barbecues, Medicine

PAHs occur in more than 100 different combinations. They are produced when materials such as coal, oil, gas, wood and garbage are burned but the combustion process is not complete. Natural sources include forest fires and volcanos. People also can be exposed by eating barbecued or smoked foods or by applying coal tar-based medications used for skin problems such as eczema.

Because BaP is the most studied of the polycyclic aromatic hydrocarbons, information about it is used to predict the toxicity of other PAHs.

The air toxics program needs the information the IRIS assessment will provide about ways, other than cancer, that benzo[a]pyrene may affect human health, Pagan said. The office also needs the IRIS program's conclusions about the chemical's carcinogenicity, she said.

Christopher Saranko, a toxicologist working for Geosyntec Consultants on behalf of the Utility Solid Waste Activities Group, told the board the IRIS assessment also will be important for hazardous waste cleanup decisions. Saranko spoke during a public comment portion of the board's meeting.

Many of the superfund sites the solid waste group's members are involved with have benzo[a]pyrene and other PAHs as key pollutants, he said.

Key Conclusions Under Reviewing

Key conclusions in the draft assessment EPA released in 2014 include:

- benzo[a]pyrene is a human carcinogen;
- its dermal slope factor is 0.006 micrograms per day (µg/d), making it a potent skin carcinogen;
- people who ingest less than the proposed overall reference dose (RfD) of 0.003 milligram benzo[a]pyrene per kilogram body weight per day (mg/kg-day) over their lifetime would not be harmed by the chemical (the agency's draft included additional RfDs for risk analysts focusing on specific adverse effects); and
- people who inhale a reference concentration (RfC) of 0.00002 milligram benzo[a]pyrene per cubic meter air (mg/m3) over their lifetime also would not be harmed.

Several committee members urged the agency to better explain how it reached the conclusion that benzo[a]pyrene is a human carcinogen.

There is clear evidence that the chemical causes cancer in animals, committee members said.

The agency needs to better explain how the biological changes that occur in animals would predict human cancers, several committee members said.

First-Ever Dermal Slope Factor

Saranko and analysts representing other trade associations focused their public comments on the dermal slope factor the agency has drafted.

The dermal slope factor would be the first one the agency has ever calculated in an IRIS assessment of any chemical. Slope factors are used to calculate a compound's cancer potency.
The EPA does not have guidance directing its scientists as to how dermal slope factors are to be calculated, said Anne LeHuray, executive director of Pavement Coatings Technology Council.
"Until such guidance is available, the dermal dose-response assessment of benzo[a]pyrene should not be finalized," LeHuray said.
Saranko; Annette Rohr, principal technical leader of air quality and health at the Electric Power Research Institute; and Brian Magee, a consultant speaking on behalf of the American Petroleum Institute, Asphalt Institute and pavement council, said the draft dermal slope factor greatly exaggerates BaP's cancer potency.
The slope factor would imply that more than 100 percent of skin cancers on people's hands result from touching BaP-containing soil or barbecued or smoked foods, Magee said.
"That contradicts the conclusion that ultraviolet light is the leading cause of skin cancer," he said.

Scoring Rhetorical Points?
Committee member John Kissel, an environmental engineer teaching at the University of Washington, questioned that argument. "Do you seriously believe your own arguments or are you trying to score rhetorical points with your arguments?"
The calculations Magee and others presented to the board were based on multiple worst-case assumptions or "compounded conservatism," Kissel said.
Magee said even if the percentage of cancers he predicted using the draft dermal slope factor were not precisely accurate, they still show that EPA's draft factor exaggerates the risk.
The draft slope factor would make hazardous cleanups more complex and expensive, Saranko said.
The Chemical Assessment Advisory Committee will discuss the dermal slope factor and many other aspects of the agency's draft BaP assessment as its meeting continues on April 16 and 17.

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